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L27: Entry 20 of 21

File: USPT

Mar 30, 1999

DOCUMENT-IDENTIFIER: US 5888934 A

TITLE: Herbicidal compositions and adjuvant composition comprising alkylpolyglycoside and ethoxylated alcohol surfactants

Brief Summary Text (9):

The alkylpolyglycoside for use in the present invention may be obtained by the reaction of alkanols with glucose or other mono- or di- or polysaccharides. As used herein the term "alkylpolyglycoside" includes an alkylmonoglycoside. Preferred alkylpolyglycosides for use in the present invention are alkylpolyglucosides obtained by the reaction of glucose with a straight or branched chain alkanol or mixture of alkanols, for example a mixture of alkanols containing 7 to 18, preferably 7 to 16 carbon atoms for example 8 to 10 carbon atoms. The number of glucose groups per alkyl group in the molecule may vary and alkyl mono- or di- or polyglucose or saccharide derivatives are possible. Commercial alkylpolyglucosides usually contain a mixture of derivatives having an average number of glucose groups per alkyl group (degree of polymerisation) of between 1 and 4, for example from about 1 to 2. A number of suitable alkylpolyglycosides are commercially available and include for example AL2042 (ICI); AGRIMUL 2069 (Henkel) and ATPLUS 258 (ICI). Saccharide-based surfactants which may be used include derivatives of mono-, di- or polysaccharides, including for example fatty acid esters of mono-, di- or polysaccharides. Such surfactants are commercially available for example under the trade mark CRODESTA (Croda).

Brief Summary Text (68):

U. sulfonyl urea herbicides such as chlorosulfuron, sulfometuron, metsulfuron and esters thereof; benzsulfuron and esters thereof such as DPX-M6313, chlorimuron and esters such as the ethyl ester thereof pirimisulfuron and esters such as the methyl ester thereof, 2-[3-(4-methoxy-6-methyl-1,3,5- triazin-yl)-3-methylureidosulphonyl] benzoic acid esters such as the methyl ester thereof (DPX-LS300) and pyrazosulfuron;

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Print

L27: Entry 21 of 21

File: USPT

Sep 2, 1997

DOCUMENT-IDENTIFIER: US 5663117 A

TITLE: Alkoxyated primary alcohol surfactants providing enhanced efficacy and/or rainfastness to glyphosate formulations

Brief Summary Text (50):

The surfactant(s) additional to alcohol alkoxyates in glyphosate compositions of the invention may be selected from alkyl monoglycosides, alkyl polyglycosides, sucrose alkylesters, secondary, tertiary, or quaternary alkylamine alkoxyates, non-alkoxyated tertiary or quaternary alkylamines, alkylamine oxides, alkylbetaines and the like. Good results may be obtained, for example, with cocoamine 2 EO and 5 EO (e.g. Ethomeen C/12 and C/15, Akzo Chemicals Inc.), N-methyltallowammonium chloride 5 EO, 10 EO and 15 EO, N-methyloctadecylammonium chloride 15 EO (e.g. Ethoquad 18/25, Akzo Chemicals Inc.), N-methylcocoammonium chloride 2 EO (formulated at 35% concentration in water as Ethoquad C/12W, Akzo Chemicals Inc.), N-methylcocoammonium chloride 15 EO (e.g. Ethoquad C/25, Akzo Chemicals Inc.), N,N-diethyl-N-methylammonium chloride 1 EO+7PO (Eracol CC-9, Witco Corporation), N, N-dimethyldodecylamine (Armeen DM12D, Akzo Chemicals Inc.), N,N,N-trimethylcocoammonium chloride (formulated at 33% concentration in water as Arquad C-33W, Akzo Chemicals Inc.), N,N,N-trimethyltallowammonium chloride (formulated at 27% concentration in water as Arquad T-27W, Akzo Chemicals Inc.), potassium laurylbetaine, alkyl polyglucosides (Agrimul PG 2067 and Agrimul PG 2069, Henkel Corporation), C.sub.8-10 alkyl monoglucoside, and sucrose cocoate (Crodesta SL-40, Croda Inc.).

Brief Summary Text (52):

In addition to glyphosate or its salts, the alcohol alkoxyate and the additional surfactant(s), any of a variety of further ingredients or adjuvants may be included in formulations of the present invention as long as such added materials are not significantly antagonistic to the glyphosate herbicidal activity and/or to the alcohol alkoxyate efficacy or rainfastness-enhancing activity. Mixtures of glyphosate with other herbicides are also within the scope of the present invention. Examples of such other herbicides include bialaphos, glufosinate, 2,4-D, MCPA, dicamba, diphenylethers, imidazolinones and sulfonylureas.

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L23: Entry 59 of 59

File: USPT

Nov 2, 1993

DOCUMENT-IDENTIFIER: US 5258359 A

TITLE: Glyphosant-containing herbicidal compositions comprising acetylenic diol rainfastness enhancing agents

Brief Summary Text (9):

It is often desirable to provide glyphosate and any potentiating surfactant in the form of a concentrated aqueous solution. However, it has been found that when acetylenic diol is used as the sole surfactant, a stable homogeneous concentrate formulation is not obtained, except at very low levels of the surfactant and/or at glyphosate salt concentrations around 15% or lower. As one increases the amount of acetylenic diol surfactant up to a point, a corresponding increase in the glyphosate activity will be gained. Unfortunately, when one adds acetylenic diol surfactants to an aqueous solution of glyphosate beyond a certain amount depending on the particular acetylenic diol used, temperature, concentration of glyphosate, etc., it has been found that the surfactant will phase separate, resulting in an unstable, nonhomogeneous formulation. In accordance with the present invention, it has been found that when acetylenic diol surfactants are used, together with at least one other surfactant of certain classes, acceptably stable, homogeneous concentrate glyphosate formulations can be obtained, in some cases also showing improved activity by comparison with formulations containing the acetylenic diol as the sole surfactant. The presence of the second surfactant raises the level of the diol which can be used in concentrates without occurrence of phase separation. Concentrates normally contain glyphosate in an amount requiring a dilution of at least 5 times and up to 100 times with water to have an optimum spray application rate. Suitable concentrates will contain about 5-40 weight percent of glyphosate acid equivalent. Among the second surfactants found useful for this purpose, for example, are included ethoxylated tertiary amines, ethoxylated quaternary amines, propoxylated quaternary amines, alkylglycosides, alkylpolyglycosides, nonalkoxylated amines, ethoxylated amine oxides, nonethoxylated amine oxides, and the like.

Detailed Description Text (7):

The second surfactant may be one or more substances selected from alkyl glycoside or alkyl polyglycoside surfactants, ethoxylated tertiary amine surfactants, ethoxylated quaternary amine surfactants, propoxylated quaternary amine surfactants, nonalkoxylated amine surfactants, nonethoxylated amine oxide surfactants, and ethoxylated amine oxide surfactants.

Detailed Description Text (8):

The alkyl glycoside and alkyl polyglycoside surfactants useful as second surfactants in accordance with the present invention can be depicted by the following molecular structure: ##STR1## wherein n is an integer of about 8-18, preferably about 9-12 and x is 1 to about 8, preferably 1 to about 3 with an average value most preferably being about 1.2 to 1.8.

Detailed Description Text (13):

In addition to the active ingredient and the diol surfactant and cosurfactant, any of a variety of additaments and other adjuvants may be included in the formulated

material of the present invention as long as such added materials are not significantly antagonistic to the glyphosate herbicidal activity and/or to the diol rainfastness-enhancing and/or herbicidal-enhancing activity. In addition to glyphosate or its salts, mixtures thereof with other herbicides are also part of this invention. Herbicides compatible with glyphosate and its salts include, for example, bialaphos, glufosinate, 2,4-D, MCPA, dicamba, diphenylethers and sulfonylureas.

Detailed Description Text (60):

The herbicidal compositions of the invention may be applied in various ways, including topically as a spray to foliage as a postemergence herbicide and they may be sorbed in powder or granular or encapsulated. Compositions of the invention are typically water based and may include ingredients in addition to the glyphosate, diol and second surfactant, such as other active herbicides, stabilizers, solubility enhancing materials, etc. Also, the compositions may be in the form of a wettable powder, water soluble granules, tablets and briquettes.

Detailed Description Text (120):

APG 325 is an alkyl polyglycoside having the formula ##STR9##

Detailed Description Text (122):

As can be seen from the above, the present invention provides a stable homogeneous herbicidal composition comprising one or more salts of glyphosate, the IPA salt being the most preferred, and an acetylenic diol surfactant or an alkoxyated acetylenic diol surfactant. In dry formulations, such as water soluble granules, wettable powders, tablets, etc., a cosurfactant may or may not be an ingredient of the composition. If the composition is formulated as an aqueous concentrate, water will be a component and it is preferred that a cosurfactant of the type disclosed herein be also a component of the composition.

Detailed Description Text (125):

It is important to note that the present invention provides a new and useful composition comprising glyphosate and/or one or more water soluble salts of glyphosate, an alkoxyated acetylenic diol surfactant, and a second cosurfactant selected from alkyl glycosides or alkyl polyglycosides, ethoxylated tertiary amines, ethoxylated quaternary amines, nonethoxylated and propoxylated quaternary amines, nonalkoxyated quaternary amines, and ethoxylated amine oxides. The compositions show herbicidal efficacy at least equal to or better than IPA glyphosate formulated in an aqueous solution with ethoxylated (15EO) tallowamine.

Current US Class (1):

504

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Search Results - Record(s) 1 through 4 of 4 returned.

☒ 1. Document ID: US 20020098981 A1

Using default format because multiple data bases are involved.

L7: Entry 1 of 4

File: PGPB

Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020098981

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020098981 A1

TITLE: Solid mixtures based on sulfonylureas and adjuvants

PUBLICATION-DATE: July 25, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Bratz, Matthias	Limburgerhof		DE
Jager, Karl-Friedrich	Limburgerhof		DE

US-CL-CURRENT: 504/211; 504/212, 504/358

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. Data
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☒ 2. Document ID: US 6482772 B1

L7: Entry 2 of 4

File: USPT

Nov 19, 2002

US-PAT-NO: 6482772

DOCUMENT-IDENTIFIER: US 6482772 B1

TITLE: Sulphonyl urea and adjuvant based solid mixtures

DATE-ISSUED: November 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bratz; Matthias	Limburgerhof			DE
Jager; Karl-Friedrich	Limburgerhof			DE

US-CL-CURRENT: 504/211; 504/212, 504/213, 504/214, 504/215, 504/216, 504/217, 504/367

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. Data
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**3. Document ID: WO 9833383 A1**

L7: Entry 3 of 4

File: EPAB

Aug 6, 1998

PUB-NO: WO009833383A1

DOCUMENT-IDENTIFIER: WO 9833383 A1

TITLE: SULPHONYL UREA AND ADJUVANT BASED SOLID MIXTURES

PUBN-DATE: August 6, 1998

## INVENTOR-INFORMATION:

NAME

COUNTRY

BRATZ, MATTHIAS

DE

JAEGER, KARL-FRIEDRICH

DE

INT-CL (IPC): A01 N 47/36

EUR-CL (EPC): A01N047/36

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Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Ds
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**4. Document ID: CZ 296327 B6, WO 9833383 A1, AU 9860941 A, CZ 9902657 A3, ZA 9800723 A, EP 955810 A1, NO 9903694 A, CN 1246035 A, SK 9900987 A3, BR 9806805 A, HU 200000924 A2, NZ 337263 A, MX 9906402 A1, KR 2000070590 A, JP 2001509799 W, AU 748718 B, US 20020098981 A1, EP 955810 B1, DE 59804994 G, US 6482772 B1, SK 282928 B6, ES 2181168 T3, TW 529910 A, MX 214199 B, IL 130814 A, IN 9800189 I4**

L7: Entry 4 of 4

File: DWPI

Feb 15, 2006

DERWENT-ACC-NO: 1998-437058

DERWENT-WEEK: 200615

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TITLE: A solid composition containing sulphonyl-urea and alkyl-poly-glycoside - useful as a herbicide with good stability

INVENTOR: BRATZ, M; JAGER, K ; JAEGER, K ; JAGER, K F

PRIORITY-DATA: 1997DE-1003365 (January 30, 1997)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>CZ 296327 B6</u>	February 15, 2006		000	A01N047/28
<u>WO 9833383 A1</u>	August 6, 1998	G	045	A01N047/36
<u>AU 9860941 A</u>	August 25, 1998		000	A01N047/36
<u>CZ 9902657 A3</u>	October 13, 1999		000	A01N047/36
<u>ZA 9800723 A</u>	October 27, 1999		044	A01N000/00
<u>EP 955810 A1</u>	November 17, 1999	G	000	A01N047/36
<u>NO 9903694 A</u>	July 29, 1999		000	A01N047/36
<u>CN 1246035 A</u>	March 1, 2000		000	A01N047/36
<u>SK 9900987 A3</u>	March 13, 2000		000	A01N047/36

<u>BR 9806805 A</u>	May 2, 2000	000	A01N047/36
<u>HU 200000924 A2</u>	July 28, 2000	000	A01N047/36
<u>NZ 337263 A</u>	September 29, 2000	000	A01N047/36
<u>MX 9906402 A1</u>	October 1, 1999	000	A01N047/36
<u>KR 2000070590 A</u>	November 25, 2000	000	A01N047/36
<u>JP 2001509799 W</u>	July 24, 2001	052	A01N025/10
<u>AU 748718 B</u>	June 13, 2002	000	A01N047/36
<u>US 20020098981 A1</u>	July 25, 2002	000	A01N047/36
<u>EP 955810 B1</u>	July 31, 2002	G 000	A01N047/36
<u>DE 59804994 G</u>	September 5, 2002	000	A01N047/36
<u>US 6482772 B1</u>	November 19, 2002	000	A01N042/36
<u>SK 282928 B6</u>	January 9, 2003	000	A01N047/36
<u>ES 2181168 T3</u>	February 16, 2003	000	A01N047/36
<u>TW 529910 A</u>	May 1, 2003	000	A01N047/28
<u>MX 214199 B</u>	May 13, 2003	000	A01N047/36
<u>IL 130814 A</u>	July 25, 2004	000	A01N047/36
<u>IN 9800189 I4</u>	March 4, 2005	E 000	C07D251/16

B , US 20020098981 A1 INT-CL (IPC): A01 N 0/00; A01 N 25/00; A01 N 25/08;  
A01 N 25/10; A01 N 25/12; A01 N 42/36; A01 N 47/28; A01 N 47/36; C07 D 239/42;  
C07 D 251/16; C07 D 251/42

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw Dg
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L12: Entry 14 of 16

File: USPT

Mar 30, 1999

DOCUMENT-IDENTIFIER: US 5888934 A

TITLE: Herbicidal compositions and adjuvant composition comprising alkylpolyglycoside and ethoxylated alcohol surfactantsAbstract Text (1):

A glyphosate composition comprises (I) N-phosphonomethylglycine or an agriculturally acceptable salt thereof, (ii) an alkyl polyglycoside surfactant, (iii) an ethoxylated alcohol, for example an ethoxylated alcohol obtained by ethoxylation of a linear or branched chain aliphatic mono alcohol having a chain length of from 8 to 20 carbon atoms and a mean degree of ethoxylation of from 2 to 50 moles of ethylene oxide per mole of alcohol, and optionally (iv) an additional surfactant, and optionally (v) a humectant.

Brief Summary Text (68):

U. sulfonyl urea herbicides such as chlorosulfuron, sulfometuron, metsulfuron and esters thereof; benzsulfuron and esters thereof such as DPX-M6313, chlorimuron and esters such as the ethyl ester thereof pirimisulfuron and esters such as the methyl ester thereof, 2-[3-(4-methoxy-6-methyl-1,3,5- triazin-yl)-3-methylureidosulphonyl] benzoic acid esters such as the methyl ester thereof (DPX-LS300) and pyrazosulfuron;

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L12: Entry 15 of 16

File: USPT

Aug 19, 1997

DOCUMENT-IDENTIFIER: US 5658853 A

**\*\* See image for Certificate of Correction \*\***TITLE: Glyphosate herbicidal compositions having enhanced rainfastness comprising an acetylenic diol and an alkyl polyglycosideBrief Summary Text (28):

In addition to the active ingredient and the diol surfactant and cosurfactant, any of a variety of additaments and other adjuvants may be included in the formulated material of the present invention as long as such added materials are not significantly antagonistic to the glyphosate herbicidal activity and/or to the diol rainfastness-enhancing and/or herbicidal-enhancing activity. In addition to glyphosate or its salts, mixtures thereof with other herbicides are also part of this invention. Herbicides compatible with glyphosate and its salts include, for example, bialaphos, glufosinate, 2,4-D, MCPA, dicamba, diphenylethers and sulfonylureas.

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Search Results - Record(s) 11 through 16 of 16 returned.

 11. Document ID: US 6383231 B1

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L12: Entry 11 of 16

File: USPT

May 7, 2002

US-PAT-NO: 6383231

DOCUMENT-IDENTIFIER: US 6383231 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Mixture for the oxidation tinting of keratin fibres containing a laccase and tinting method using said mixture

DATE-ISSUED: May 7, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lang; Gerard	Saint Prix			FR
Cotteret; Jean	Verneuil/Seine			FR

US-CL-CURRENT: 8/405; 8/401, 8/406, 8/408, 8/455, 8/504, 8/908

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KIMC</a>	<a href="#">Draw D</a>
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 12. Document ID: US 6261325 B1

L12: Entry 12 of 16

File: USPT

Jul 17, 2001

US-PAT-NO: 6261325

DOCUMENT-IDENTIFIER: US 6261325 B1

TITLE: Oxidizing composition for treating keratin fibres

DATE-ISSUED: July 17, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
de la Mettrie; Roland	Le Vesinet			FR
Cotteret; Jean	Verneuil sur Seine			FR
de Labbey; Arnaud	Aulnay sous Bois			FR
Maubru; Mireille	Chatou			FR

US-CL-CURRENT: 8/405; 424/70.22, 424/70.23, 424/70.24, 510/119, 510/127, 8/401,

8/407

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawings
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**13. Document ID: US 6169065 B1**

L12: Entry 13 of 16

File: USPT

Jan 2, 2001

US-PAT-NO: 6169065

DOCUMENT-IDENTIFIER: US 6169065 B1

TITLE: Method for the activity of an enzyme

DATE-ISSUED: January 2, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Antheunisse; Willem	Vlaardingen			NL
Hage; Ronald	Vlaardingen			NL
Hora; Jiri	Den Haag			NL
Swarthoff; Ton	Vlaardingen			NL
Twisker; Robin Stefan	Vlaardingen			NL

US-CL-CURRENT: 510/392; 510/305, 510/306, 510/311, 510/320, 510/374, 510/375,  
510/393, 510/530, 8/137, 8/401

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawings
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**14. Document ID: US 5888934 A**

L12: Entry 14 of 16

File: USPT

Mar 30, 1999

US-PAT-NO: 5888934

DOCUMENT-IDENTIFIER: US 5888934 A

TITLE: Herbicidal compositions and adjuvant composition comprising  
alkylpolyglycoside and ethoxylated alcohol surfactants

DATE-ISSUED: March 30, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Townson; Jane Karen	Maidenhead			GB
Hart; Clifford Arthur	Wokingham			GB
Osborn; Martin Keith	Wokingham			GB
Bean; Michael John	Bracknell			GB

US-CL-CURRENT: 504/206

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 15. Document ID: US 5658853 A

L12: Entry 15 of 16

File: USPT

Aug 19, 1997

US-PAT-NO: 5658853

DOCUMENT-IDENTIFIER: US 5658853 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Glyphosate herbicidal compositions having enhanced rainfastness comprising an acetylenic diol and an alkyl polyglycoside

DATE-ISSUED: August 19, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kassebaum; James W.	Manchester	MO		
Dayawon; Miguel M.	St. Louis	MO		
Sandbrink; Joseph J.	Des Peres	MO		

US-CL-CURRENT: 504/206; 504/362

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 16. Document ID: US 5258358 A

L12: Entry 16 of 16

File: USPT

Nov 2, 1993

US-PAT-NO: 5258358

DOCUMENT-IDENTIFIER: US 5258358 A

TITLE: Liquid herbicidal compositions containing glufosinate and an alkyl polyglycoside

DATE-ISSUED: November 2, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kocur; Jean	Hofheim am Taunus			DE
Maier; Thomas	Frankfurt am Main			DE
Langeluddeke; Peter	Hofheim am Taunus			DE
Hess; Martin	Mainz			DE

US-CL-CURRENT: 504/205; 504/127, 504/363

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☒ 1. Document ID: US 20050266999 A1

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L12: Entry 1 of 16

File: PGPB

Dec 1, 2005

PGPUB-DOCUMENT-NUMBER: 20050266999

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050266999 A1

TITLE: Concentrated aqueous formulations for crop protection

PUBLICATION-DATE: December 1, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Frisch, Gerhard	Wehrheim		DE
Schnabel, Gerhard	Elsfeld		DE
Rude, Janine	Kriftel		DE

US-CL-CURRENT: [504/365](#)

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KIMC</a>	<a href="#">Draw D</a>
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☒ 2. Document ID: US 20050175554 A1

L12: Entry 2 of 16

File: PGPB

Aug 11, 2005

PGPUB-DOCUMENT-NUMBER: 20050175554

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050175554 A1

TITLE: Aminophenylbenzothiazole compounds

PUBLICATION-DATE: August 11, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Wagner, Barbara	Lorrach		DE
Ehlis, Thomas	Freiburg		DE
Mongiat, Sebastien	Sierentz		FR
Eichin, Kai	Wittlingen		DE

US-CL-CURRENT: 424/59; 548/152

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw De
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☒ 3. Document ID: US 20050144739 A1

L12: Entry 3 of 16

File: PGPB

Jul 7, 2005

PGPUB-DOCUMENT-NUMBER: 20050144739

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050144739 A1

TITLE: Treatment of dyed keratin fibres with a surfactant composition, and use for protecting the colour

PUBLICATION-DATE: July 7, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Lalleman, Boris	Paris		FR
Kravtchenko, Sylvain	Asnieres		FR

US-CL-CURRENT: 8/405

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw De
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☒ 4. Document ID: US 20040023803 A1

L12: Entry 4 of 16

File: PGPB

Feb 5, 2004

PGPUB-DOCUMENT-NUMBER: 20040023803

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040023803 A1

TITLE: Method for producing a solid herbicide formulation

PUBLICATION-DATE: February 5, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Jger, Karl-Friedrich	Ludwigshafen		US
Zagar, Cyrill			DE

US-CL-CURRENT: 504/105; 504/106

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw De
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☒ 5. Document ID: US 20020193253 A1

L12: Entry 5 of 16

File: PGPB

Dec 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020193253  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020193253 A1

TITLE: Herbicidal composition

PUBLICATION-DATE: December 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Kruger, Christian	Grenzach-Wyhlen		DE
Allard, Jean-Louis	Rheinfelden		CH
Labhart, Christoph	Himmelried		CH

US-CL-CURRENT: 504/136

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Ds
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☒ 6. Document ID: US 20020189028 A9

L12: Entry 6 of 16

File: PGPB

Dec 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020189028  
PGPUB-FILING-TYPE: corrected  
DOCUMENT-IDENTIFIER: US 20020189028 A9

TITLE: Oxidising composition for treating keratin fibres

PUBLICATION-DATE: December 19, 2002

PRIOR-PUBLICATION:

DOC-ID	DATE
US 0040509 A1	April 11, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Mettrie, Roland De La	Le Vesinet		FR
Cotteret, Jean	Verneuil sur Seine		FR
Labbey, Arnaud De	Aulnay sous Bois		FR
Maubru, Mireille	Chatou		FR

US-CL-CURRENT: 8/405; 8/406

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Ds
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☒ 7. Document ID: US 20020045549 A1

L12: Entry 7 of 16

File: PGPB

Apr 18, 2002

PGPUB-DOCUMENT-NUMBER: 20020045549  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020045549 A1

TITLE: Herbicidal composition

PUBLICATION-DATE: April 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Kruger, Christian	Grenzach-Wyhlen		DE
Allard, Jean-Louis	Rheinfelden		CH
Labhart, Christoph	Himmelried		CH

US-CL-CURRENT: 504/211; 504/242, 504/363, 504/364

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw De
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■ 8. Document ID: US 20020040509 A1

L12: Entry 8 of 16

File: PGPB

Apr 11, 2002

PGPUB-DOCUMENT-NUMBER: 20020040509  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020040509 A1

TITLE: Oxidising composition for treating keratin fibres

PUBLICATION-DATE: April 11, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Mettrie, Roland De La	Le Vesinet		FR
Cotteret, Jean	Verneuil sur Seine		FR
Labbey, Arnaud De	Aulnay sous Bois		FR
Maubru, Mireille	Chatou		FR

US-CL-CURRENT: 8/405; 8/406

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw De
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■ 9. Document ID: US 6673747 B2

L12: Entry 9 of 16

File: USPT

Jan 6, 2004

US-PAT-NO: 6673747  
DOCUMENT-IDENTIFIER: US 6673747 B2

TITLE: Herbicidal composition comprising pretilachlor or pyriftalid with  
sulfonylureas

DATE-ISSUED: January 6, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kruger; Christian	Grenzach-Wyhlen			DE
Allard; Jean-Louis	Rheinfelden			CH
Labhart; Christoph	Himmelried			CH

US-CL-CURRENT: [504/133](#); [504/134](#), [504/135](#), [504/136](#), [504/211](#), [504/243](#), [504/342](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw De
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☒ 10. Document ID: US 6559098 B1

L12: Entry 10 of 16

File: USPT

May 6, 2003

US-PAT-NO: 6559098

DOCUMENT-IDENTIFIER: US 6559098 B1

TITLE: Sulphonylurea and/adjuvant based solid mixtures

DATE-ISSUED: May 6, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bratz; Matthias	Limburgerhof			DE
Jager; Karl-Friedrich	Limburgerhof			DE
Berghaus; Rainer	Speyer			DE

US-CL-CURRENT: [504/133](#); [504/134](#), [504/136](#), [504/211](#), [504/212](#), [504/214](#), [504/321](#),  
[504/332](#), [504/367](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw De
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L22: Entry 6 of 6

File: USPT

Nov 16, 1999

DOCUMENT-IDENTIFIER: US 5985793 A

TITLE: Sequential application method for treating plants with exogenous chemicals

Detailed Description Text (10):

Herbicides which can be applied by the method of the present invention include but are not limited to any listed in standard reference works such as the "Herbicide Handbook," Weed Science Society of America, 1994, 7th ed. Illustratively these herbicides include acetanilides such as acetochlor, alachlor and metolachlor, aminotriazole, asulam, bentazon, bialaphos, bipyridyls such as paraquat, bromacil, cyclohexenones such as clethodim and sethoxydim, dicamba, diflufenican, dinitroanilines such as pendimethalin, diphenylethers such as acifluorfen, fomesafen and oxyfluorfen, fosamine, flupoxam, glufosinate, glyphosate, hydroxybenzonitriles such as bromoxynil, imidazolinones such as imazaquin and imazethapyr, isoxaben, norflurazon, phenoxies such as 2,4-D, phenoxypropionates such as diclofop, fluazifop and quizalofop, picloram, propanil, substituted ureas such as fluometuron and isoproturon, sulfonylureas such as chlorimuron, chlorsulfuron, halosulfuron, metsulfuron, primisulfuron, sulfometuron and sulfosulfuron, thiocarbamates such as triallate, triazines such as atrazine and metribuzin, and triclopyr. Not all of these herbicides exhibit antagonism with all accession agents, but where antagonism is exhibited, the method of the present invention reduces or eliminates that antagonism. Herbicidally active derivatives of any known herbicide are also within the scope of the present invention if applied by the method herein described. A herbicidally active derivative is any compound which is a minor structural modification, most commonly but not restrictively a salt or ester, of a known herbicide. These compounds retain the essential activity of the parent herbicide, but do not necessarily have a potency equal to that of the parent herbicide. These compounds convert to the parent herbicide before or after they enter the treated plant. Mixtures or coformulations of a herbicide with other ingredients, or of more than one herbicide, can likewise be employed. Preferred herbicides for use according to the method of the present invention are those which are normally foliar-applied rather than soil-applied. Especially preferred foliar-applied herbicides are those which show a degree of systemicity in the plant, in other words are to some extent translocated from the point of entry to a point of action in the plant at some distance from the point of entry.

Detailed Description Text (269):

Agrimul PG 2069 of Henkel Corporation: disclosed in Henkel Technical Bulletin 105B, 1993, as a composition containing 50% alkyl polyglucoside, abbreviated in tables herein as 'PG 2069'. A newsletter from Henkel dated July 1996 and titled "Solutions in the field: Agrimul PG surfactants" discloses that Agrimul PG 2069 has a C9-11 alkyl chain and that its degree of polymerization (moles glucose per mole surfactant) is 1.6.

Detailed Description Paragraph Table (69):

TABLE 66A

	In vitro
test TM Antag In vitro predicts antag? reduced? infiltrant? antag reduced? Agent	
Chemical description Class (1) (2) (3) (4)	

Aerosol  
 22 dicarboxyethyl stearyl sulfosuccinamate, anionic yes no no yes Na4 salt Aerosol  
 A-102 decanol ethoxylate sulfosuccinate, Na2 salt anionic yes yes no no Aerosol A-  
 103 nonylphenol 10EO sulfosuccinate, Na2 salt anionic yes yes no no Aerosol A-268  
 isodecyl sulfosuccinate, Na2 salt anionic no no yes no Aerosol OS diisopropyl  
 naphthalene sulfonate, Na salt anionic yes yes no no Aerosol OT dioctyl  
 sulfosuccinate, Na salt anionic yes yes yes yes Alpha-Step MC-48 methyl 2-  
 sulfococoate, Na salt anionic yes yes no no Alpha-Step ML-40 methyl-2-sulfolaurate,  
 Na salt anionic yes yes Bio-Soft D-62 alkyl benzene sulfonate anionic yes yes Bio-  
 Soft MG-50 alkyl benzene sulfonate anionic yes yes no no Bio-Soft N-300  
 triethanolamine dodecylbenzene sulfonate anionic yes yes Bio-Terge AS-40 C14-16  
 olefin sulfonate, Na salt anionic yes yes Bio-Terge PAS-85 octane sulfonate, Na  
 salt anionic yes yes Cedepal TD-407 tridecyl EO sulfate, Na salt anionic yes yes  
 Cedephos FA-600 decyl 4EO phosphate anionic yes yes Daxad 15 naphthalene sulfonate  
 formaldehyde anionic yes yes no no condensate Daxad 17 naphthalene sulfonate  
 formaldehyde anionic yes yes condensate Dowfax 3B2 decyl diphenyloxide disulfonate,  
 Na salt anionic yes yes Emcol CNP-110 nonylphenol 9EO carboxylate anionic yes yes  
 no no Emery 5366 naphthalene sulfonate, NH4 salt anionic yes yes no no Emphos CS-  
 121 nonylphenol 4EO phosphate anionic yes yes no no Emphos CS-136 nonylphenol 6EO  
 phosphate anionic yes yes no no Emphos CS-141 nonylphenol 10EO phosphate anionic  
 yes yes no no Emphos PS-121 isotridecyl 4EO phosphate anionic yes yes Emphos PS-  
 131 isotridecyl 6EO phosphate anionic yes yes yes yes Emphos PS-21A C10-12 alkyl  
 6EO phosphate anionic yes yes yes yes Emphos PS-400 alcohol EO phosphate anionic  
 yes yes yes yes Fluorad FC-120 perfluoroalkyl sulfonate, NH4 salt anionic yes yes  
 yes yes Fluorad FC-129 fluoroalkyl carboxylate, K salt anionic yes yes Fluorad FC-  
 98 perfluoroalkyl sulfonate, K salt anionic yes yes no no Fluorad FC-99 perfluoro  
 alkyl sulfonate, amine salt anionic yes yes heptanoate, Na salt anionic yes yes no  
 no hexanesulfonate, Na salt anionic yes yes no no hexanoate, Na salt anionic yes  
 yes no no lecithin from soya anionic no no Miranol C2M coco dicarboxylate, Na2 salt  
 anionic no no no yes Ninate 401-HF dodecyl benzene sulfonate, Ca salt anionic yes  
 yes yes yes perfluorobutanesulfonate anionic yes yes no no perfluoroheptanoate  
 anionic yes no perfluorooctanesulfonate anionic yes yes perfluoropentanoate anionic  
 yes yes Polyfon H lignosulfonate anionic yes yes no no PolyStep B-25 decyl sulfate,  
 Na salt anionic yes yes no no PolyStep B-29 octyl sulfate, Na salt anionic yes yes  
 no no Reax 100M lignosulfonate anionic yes yes no no Reax 85A lignosulfonate  
 anionic yes yes no no Reax 88B lignosulfonate anionic yes yes no no Soprophor 3D33  
 tristyrilphenol EO phosphate anionic no no no yes Soprophor 4D384 tristyrilphenol  
 EO sulfate anionic yes yes no no Steol CS-4 fatty acid EO sulfate anionic yes yes  
 Steol CS-370 lauryl EO sulfate, Na salt anionic yes yes no no Steol KS-460 lauryl  
 EO sulfate, Na salt anionic yes yes Stepanol AEG lauryl sulfate, NH4 salt anionic  
 no no no yes Stepanol AEM lauryl sulfate, NH4 salt anionic yes yes no no Stepanol  
 ME Dry lauryl sulfate, Na salt anionic yes yes no no Stepanol WAC lauryl sulfate,  
 Na salt anionic yes yes no no Stepfac 8170 nonylphenol EO phosphate anionic yes yes  
 no no Stepfac 8171 nonylphenol EO phosphate anionic yes yes no no Stepfac 8172  
 nonylphenol EO phosphate anionic yes yes no no Stepfac 8173 nonylphenol EO  
 phosphate anionic yes yes no no Tryfac 5552 alcohol EO phosphate anionic yes yes  
 yes yes Tryfac 5556 alkylphenol EO phosphate anionic yes yes no no Aerosol C-61  
 alkyl guanidine-amine ethoxylate cationic no no Ethoduomeen T/13 tallow  
 aminopropylamine 3EO cationic no no no yes Ethoduomeen T/25 tallow aminopropylamine  
 15EO cationic no no no yes Ethomeen C/12 cocoamine 2EO cationic yes yes yes yes  
 Ethomeen T/25 tallowamine 15EO cationic no no no yes Ethomeen T/30 tallowamine 20EO  
 cationic yes no Ethoquad 18/25 stearyl methyl ammonium chloride 15EO cationic no no  
 no yes Ethoquad C/12 coco methyl ammonium chloride 2EO cationic no no no yes  
 Fluorad FC-135 fluoroalkyl methyl ammonium iodide cationic yes no no yes Fluorad  
 FC-750 fluoroalkyl methyl ammonium iodide cationic yes yes Fluorad FC-754  
 fluoroalkyl methyl ammonium chloride cationic no no MON-0818 product containing  
 tallowamine 15EO cationic no no no yes Silamine C-100 cationic no no no yes  
 Surfonic AGM-550 alkyl etheramine EO cationic yes yes Ammonyx CDO  
 cocoamidopropylamine oxide amphoteric no no no yes Ammonyx CO palmitylamine oxide  
 amphoteric no no no yes Ammonyx LO laurylamine oxide amphoteric no no no yes

Ammonyx MO myristylamine oxide amphoteric no no no yes Ammonyx SO stearylamine oxide amphoteric no no no yes Amphosol CA cocoamidopropyl betaine amphoteric no no Fluorad FC-751 fluorinated amphoteric amphoteric no no Varion CDG lauryl betaine amphoteric no no no yes Velvetex AB-45 coco betaine amphoteric no no no yes Velvetex BA-35 cocoamidopropyl betaine amphoteric no no no yes Agrimul PG 2062 alkyl polyglucoside nonionic yes no Agrimul PG 2065 alkyl polyglucoside nonionic yes no Agrimul PG 2069 C9-11 alkyl 1.5 polyglucoside nonionic no no no yes Agrimul PG 2072 alkyl polyglucoside nonionic yes no Agrimul PG 2076 C8-10 alkyl 1.5 polyglucoside nonionic yes no no yes Alcodet 218 isolauryl 10EO thioether nonionic no no no yes Alcodet 260 isolauryl 6EO thioether nonionic yes yes yes yes Alcodet SK isolauryl 8EO thioether nonionic yes yes yes yes Amidox C-5 cocoamide 6EO nonionic no no Amidox L-5 lauramide 7EO nonionic yes no no yes Crodesta SL-40 sucrose cocoate nonionic yes yes Ethylan CPG-945 alcohol EO/PO nonionic yes yes yes yes Fluorad FC-170C fluoroalcohol EO nonionic yes yes yes yes Fluorad FC-171 fluoroalcohol EO/PO nonionic yes yes Fluorad FC-430 fluoroalkyl ester nonionic yes yes yes yes Fluorad FC431 fluoroalkyl ester nonionic no no Kinetic adjuvant containing trisiloxane EO methyl nonionic yes yes ether Makon 12 nonylphenol 12EO nonionic yes no no yes Makon 30 nonylphenol 30EO nonionic yes no no yes Makon 4 nonylphenol 4EO nonionic yes yes yes yes Masil 1066C organosilicone EO nonionic yes yes Masil 1066D organosilicone EO nonionic yes no Masil 2132 organosilicone EO nonionic yes yes Myrj 45 stearate 8EO nonionic no no no yes Myrj 52 stearate 40EO nonionic no no no yes Myrj 59 stearate 10EO nonionic no no no yes Neodol 1-5 undecanol 5EO nonionic yes yes yes yes Neodol 25-3 C12-15 alcohol 3EO nonionic yes no yes Neodol 25-9 C12-15 alcohol 9EO nonionic no no no yes Neodol 91-8 C9-11 alcohol 8EO nonionic no no no yes Ninex MT-610 tall oil fatty acid 10EO nonionic no no no yes Ninol 40-CO cocoamide DEA nonionic no no no yes Ninol 49-CE cocoamide DEA nonionic yes no no yes Nipol 2782 nonylphenol 32EO/19PO mixed nonionic no no no yes Nipol 4472 nonylphenol 41EO/41PO mixed nonionic yes no no yes Nipol 5595 nonylphenol 66EO/41PO mixed nonionic no no no yes nonanol 2EO nonionic yes yes yes yes nonanol 4EO nonionic yes yes yes yes Pluronic 10-R-5 PO/EO/PO block copolymer nonionic no no no yes Pluronic 31-R-1 PO/EO/PO block copolymer nonionic yes no no yes Pluronic F-127 EO/PO/EO block copolymer nonionic no no no yes Pluronic F-68 EO/PO/EO block copolymer nonionic no no no yes Pluronic L-35 EO/PO/EO block copolymer nonionic yes no no yes Pluronic P-103 EO/PO/EO block copolymer nonionic no no no yes Pluronic P-105 EO/PO/EO block copolymer nonionic no no no yes Silwet 408 polysiloxane EO nonionic yes yes yes yes Silwet 800 polysiloxane EO nonionic yes yes yes yes Silwet L-7001 organosilicone EO nonionic yes yes no no Silwet L-720 organosilicone EO nonionic yes yes Silwet L-7200 organosilicone EO nonionic no no no yes Silwet L-7210 organosilicone EO nonionic yes no no yes Silwet L-7500 organosilicone EO nonionic yes no Silwet L-7600 organosilicone EO nonionic yes no no yes Silwet L-7602 organosilicone EO nonionic yes no no yes Silwet L-7604 organosilicone EO nonionic yes yes yes yes Silwet L-7605 organosilicone EO nonionic yes no no yes Silwet L-7607 polysiloxane EO nonionic yes yes Silwet L-7614 organosilicone EO nonionic yes no no yes Silwet L-7622 organosilicone EO nonionic yes yes Silwet L-77 trisiloxane 7EO methyl ether nonionic yes yes yes Simulsol SL-10 alkyl polyglucoside nonionic no no no yes Simulsol SL-11 undecyl glucoside nonionic no no yes no Simulsol SL-4 alkyl polyglucoside nonionic no no no yes Simulsol SL-62 alkyl polyglucoside nonionic no no Soprophor 796/P tristyrilphenol EO/PO nonionic no no no yes Soprophor CY/8 tristyrilphenol 20EO nonionic no no no yes Surfynol 465 tetramethyl decyne diol 10EO nonionic no no no yes

Current US Cross Reference Classification (4):

504/212

CLAIMS:

7. The method of claim 6, wherein the herbicide is selected from the group consisting of acetanilides, bipyridyls, cyclohexenones, dinitroanilines, diphenylethers, hydroxybenzonitriles, imidazolinones, phenoxies, phenoxypropionates, substituted ureas, sulfonylureas, thiocarbamates, and

triazines.

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L22: Entry 5 of 6

File: USPT

Jun 3, 2003

DOCUMENT-IDENTIFIER: US 6573217 B2

TITLE: Herbicidal compositions

Brief Summary Text (9):

Examples of especially suitable active substances from the group of the grass-controlling sulfonamides are grass-controlling sulfonylureas such as flucarbazone (MKH 6561), procarbazon (MKH 6562), sulfosulfuron, rimsulfuron, nicosulfuron, flupyrsulfuron, iodosulfuron-methyl, foramsulfuron (Agrow No. 338, PJB Publications Ltd. 1999, page 26) and mesosulfuron-methyl and/or their salts (Agrow No. 347, PJB Publications Ltd. 2000, page 22).

Brief Summary Text (10):

Very especially preferred are sulfonylureas of the formula (I) and/or their salts ##STR1##

Brief Summary Text (12):

Examples of sulfonylureas of the formula (I) and/or their salts are mesosulfuron-methyl, mesosulfuron-methyl-sodium, iodosulfuron-methyl, iodosulfuron-methyl-sodium, foramsulfuron and foramsulfuron-sodium.

Brief Summary Text (13):

Examples of suitable salts of the sulfonamides a) such as sulfonylureas are compounds in which the hydrogen of the --SO.sub.2 --NH-group is replaced by an agriculturally suitable cation. Examples of these salts are metal salts, in particular alkali metal salts or alkaline earth metal salts, in particular sodium salts and potassium salts, or else ammonium salts or salts with organic amines. Equally, salt formation can be effected by an addition reaction of an acid with basic groups such as, for example, amino and alkylamino. Acids which are suitable for this purpose are strong inorganic and organic acids, for example HCl, HBr, H.sub.2 SO.sub.4 or HNO.sub.3.

Brief Summary Text (64):

Alkylene oxide adducts of alkyne diols such as the Surfynol.RTM. brands by Air Products. Sugar derivatives such as amino and amido sugars from Clariant, glucitols from Clariant, alkyl polyglycosides in the form of the APG.RTM. brands by Henkel or such as sorbitan esters in the form of the Span.RTM. or Tween.RTM. brands by Uniquema or cyclodextrin esters or ethers from Wacker. .alpha..5) Surface-active cellulose and algin, pectin and guar derivatives such as the Tylose.RTM. brands by Clariant, the Manutexe brands by Kelco and guar derivatives from Cesalpina.

Current US Original Classification (1):504/212Current US Cross Reference Classification (1):504/214

## CLAIMS:

2. A herbicidal composition as claimed in claim 1, comprising, as component a), a grass-controlling sulfonylurea.

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 1. Document ID: US 20050266996 A1

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L22: Entry 1 of 6

File: PGPB

Dec 1, 2005

PGPUB-DOCUMENT-NUMBER: 20050266996

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050266996 A1

TITLE: Combinations of crop protection agents with organic or inorganic carrier materials

PUBLICATION-DATE: December 1, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Krause, Hans-Peter	Hofheim		DE
Schnabel, Gerhard	Elsenfeld		DE
Frisch, Gerhard	Wehrheim		DE
Wurtz, Jochen	Bingen am Rhein		DE
Bickers, Udo	Wietmarschen		DE
Hacker, Erwin	Hochheim		DE
Auler, Thomas	Bad Soden		DE
Melendez, Alvaro	Schwalbach		DE
Haase, Detlev	Frankfurt		DE

US-CL-CURRENT: [504/211](#); [504/359](#)

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KVMC</a>	<a href="#">Draw De</a>
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 2. Document ID: US 20020072474 A1

L22: Entry 2 of 6

File: PGPB

Jun 13, 2002

PGPUB-DOCUMENT-NUMBER: 20020072474

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020072474 A1

TITLE: Herbicidal compositions

PUBLICATION-DATE: June 13, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Bickers, Udo	Wietmarschen		DE
Bieringer, Hermann	Eppstein		DE
Frisch, Gerhard	Wehrheim		DE
Hacker, Erwin	Hochheim		DE
Huff, Hans Philipp	Eppstein		DE

US-CL-CURRENT: 504/211

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Da
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 3. Document ID: US 20020058591 A1

L22: Entry 3 of 6

File: PGPB

May 16, 2002

PGPUB-DOCUMENT-NUMBER: 20020058591

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020058591 A1

TITLE: Herbicidal compositions

PUBLICATION-DATE: May 16, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Bickers, Udo	Wietmarschen		DE
Bieringer, Hermann	Eppstein		DE
Frisch, Gerhard	Wehrheim		DE
Hacker, Erwin	Hochheim		DE
Huff, Hans Philipp	Eppstein		DE

US-CL-CURRENT: 504/211

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Da
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 4. Document ID: US 6770594 B2

L22: Entry 4 of 6

File: USPT

Aug 3, 2004

US-PAT-NO: 6770594

DOCUMENT-IDENTIFIER: US 6770594 B2

TITLE: Herbicidal compositions

DATE-ISSUED: August 3, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
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Bickers; Udo	Wietmarschen	DE
Bieringer; Hermann	Eppstein	DE
Frisch; Gerhard	Wehrheim	DE
Hacker; Erwin	Hochheim	DE
Huff; Hans Philipp	Eppstein	DE

US-CL-CURRENT: [504/212](#); [504/214](#), [504/363](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 5. Document ID: US 6573217 B2

L22: Entry 5 of 6

File: USPT

Jun 3, 2003

US-PAT-NO: 6573217

DOCUMENT-IDENTIFIER: US 6573217 B2

TITLE: Herbicidal compositions

DATE-ISSUED: June 3, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bickers; Udo	Wietmarschen			DE
Bieringer; Hermann	Eppstein			DE
Frisch; Gerhard	Wehrheim			DE
Hacker; Erwin	Hochheim			DE
Huff; Hans Philipp	Eppstein			DE

US-CL-CURRENT: [504/212](#); [504/214](#), [504/333](#), [504/363](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 6. Document ID: US 5985793 A

L22: Entry 6 of 6

File: USPT

Nov 16, 1999

US-PAT-NO: 5985793

DOCUMENT-IDENTIFIER: US 5985793 A

TITLE: Sequential application method for treating plants with exogenous chemicals

DATE-ISSUED: November 16, 1999

## INVENTOR-INFORMATION:

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US-CL-CURRENT: [504/363](#); [424/405](#), [504/206](#), [504/208](#), [504/212](#), [504/250](#), [504/253](#),  
[504/258](#), [504/274](#), [504/291](#), [504/323](#), [504/324](#), [504/339](#), [504/342](#), [504/347](#), [504/352](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw De
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L23: Entry 31 of 59

File: USPT

Oct 1, 2002

DOCUMENT-IDENTIFIER: US 6458745 B1

TITLE: Solid phytosanitary agentAbstract Text (1):

A solid crop protection composition consisting essentially of a) one or more predominantly amorphous crop protection active ingredients which are solid per se and have solubility in water of less than 500 mg/l at 25.degree. C. and b) a coating enclosing component (a).

Brief Summary Text (1):

The present invention relates to solid crop protection compositions of one or more predominantly amorphous crop protection active ingredients which are solid per se and have solubility in water of less than 500 mg/l at 25.degree. C. and of a coating enclosing these active ingredients.

Brief Summary Text (3):

The starting materials for the preparation of suspensions of crop protection active ingredients which are solid per se are frequently solid--for example pulverulent or granular--formulations of the crop protection active ingredients, which are mixed with a suitable solvent, especially water. The crop protection active ingredients are predominantly in crystalline form in the solid formulations conventionally used for this purpose.

Brief Summary Text (5):

U.S. Pat. No. 5,133,908 discloses using nanoparticles--i.e. particles with an average diameter in the nanometer range--as carriers for active ingredients and, if appropriate, drying them by means of lyophilization. Preparation is effected in a process at low temperature, low pressure and little or no stirring. As regards their stability and their properties upon use, these known products are as yet unsatisfactory in the crop protection sector.

Brief Summary Text (6):

It is an object of the present invention to provide a nanoparticulate formulation for solid crop protection active ingredients which is better suited to the preparation of liquid formulations which can be used in crop protection and which, in particular, leads to an enhanced efficacy of the crop protection active ingredients thus formulated.

Brief Summary Text (18):

Herbicidal active ingredients which may be mentioned are: thiadiazoles: bromobutide, dimepiperate, diphenamid, etobenzanid (benzchlomet), flamprop-methyl, isoxaben, naptalame, pronamid (propyzamid), propanil, anilides: anilofos, mefenacet 2,4-D, 2,4-DB, clomeprop, dichlorprop, dichlorprop-P, fluroxypyr, MCPB, napropamide, napropanilide, triclopyr, bleaches: diflufenican, fluorchloridone, flupoxam, fluridone, pyrazolate, sulcotrione (chlormesulone), carbamates: butylate, chlorpropham, cycloate, desmedipham, EPTC, esprocarb, molinate, orbencarb, pebulate, phenmedipham, propham, prosulfocarb, pyributicarb, thiobencarb (benthicarb), thiocarbazil, triallate, vernolate, quinolinecarboxylic acids: quinclorac, quinmerac, chloracetanilides: acetochlor, alachlor, butachlor, butenachlor, metazachlor, metolachlor, pretilachlor, thenylchlor, cyclohexenones:

alloxydim, clethodim, cycloxydim, sethoxydim, tralkoxydim, dihydrobenzofuran: ethofumesate, dihydrofuran-3-one: flurtamone, dinitroanilines: benefin, butralin, dinitramin, ethalfluralin, fluchloralin, oryzalin, pendimethalin, prodiamine, trifluralin, dinitrophenols: bromofenoxim, dinoterb, DNOC, diphenyl ethers: acifluorfen-sodium, aclonifen, bifenox, chlornitrofen (CNP), ethoxyfen, fluoroglycofen-ethyl, fomesafen, lactofen, oxyfluorfen, urea: chlorbromuron, chlortoluron, cumyluron, dibenzyluron, dimefuron, diuron, dymron, fluometuron, isoproturon, linuron, methabenzthiazuron, metobenzuron, neburon, siduron, imidazolinones: imazaquin, oxadiazoles: oxadiargyl, oxadiazon, oxirane: tridiphane, phenols: bromoxynil, ioxynil phenoxyphenoxypropionic esters: clodinafop, cyhalofop-butyl, diclofop-methyl, fenoxaprop-ethyl, fenoxaprop-p-ethyl, fenthiapropethyl, fluazifop-butyl, fluazifop-p-butyl, haloxyfop-ethoxyethyl, haloxyfop-methyl, haloxyfop-p-methyl, isoxapyrifop, propaquizafop, quizalofop-ethyl, quizalofop-p-ethyl, quizalofop-tefuryl phenylpropionic acid: chlorophenprop-methyl, ppi: benzofenap, flumiclorac-pentyl, sulfentrazone, pyridazines: chloridazon, norflurazon, pyridate, pyridinecarboxylic acids: dithiopyr, picloram, thiazopyr, pyrimidyl ethers: pyriithiobac-acid, KIH-6127, sulfonamides: flumetsulam, metosulam, sulfonylureas: amidosulfuron, azimsulfuron, bensulfuron-methyl, chlorimuron-ethyl, chlorsulfuron, cinosulfuron, cyclosulfamuron, ethametsulfuron-methyl, flazasulfuron, halosulfuron-methyl, imazosulfuron, primisulfuron, prosulfuron, pyrazosulfuron-ethyl, rimsulfuron, sulfometuron-methyl, thifensulfuron-methyl, triasulfuron, triflusulfuron-methyl, triazines: ametryn, atrazine, cyanazine, dimethamethryn, prometryn, propazine, simazine, simetryn, terbumeton, terbutryn, terbutylazine, trietazine, triazolcarboxamide: triazofenamide, uracil: lenacil, various: benazolin, benfuresate, bensulide, butamifos, chlorthal-dimethyl (DCPA), cinmethylin, dichlobenil, fluorbentranil, mefluidide, piperophos.

Brief Summary Text (30):

In general, the stabilizers have one or more of the following tasks, depending on the individual case: stabilization of the amorphous state of the crop protection active ingredients in the compositions according to the invention, preventing the crystalline growth of the particles of crop protection active ingredients dispersed in a liquid medium at the expense of other particles, which may result in undesired sedimentation of the enlarged particles, and controlling the size of particles generated.

Brief Summary Text (36):

In general, the stabilizers amount to 0 to 30 and, in particular, 0 to 10, % by weight of the compositions according to the invention, based on the solids content of the crop protection compositions according to the invention.

Brief Summary Text (39):

Normally, the plasticizers amount to 0 to 70% by weight of the compositions according to the invention, based on the solids content of the crop protection compositions according to the invention.

Brief Summary Text (41):

When, later, the compositions are used in crop protection for the preparation of spray mixtures, the purpose of the coating is mainly to stabilize the coated particles in the spray mixture against agglomeration and thus to suppress sedimentation.

Brief Summary Text (42):

Presumably, the explanation of this effect is that the coating leads to the same kind of electric charge, or, when using a crop protection active ingredient in the form of a salt, an increase in charge or charge reversal of the particles. The particles, which now have the same kind of electric charge, repel each other (electrostatic stabilization), that the coated particles are kept spatially apart from each other (sterical stabilization) and/or that the coating continues to slow down or suppress further growth of the particles by means of Ostwald ripening (cf.

T. F. Tadros, "Surfactants in Agrochemicals", Surfactant Science Series, Volume 54, Marcel Dekker, New York, 1995).

Brief Summary Text (46):

Preferred amphiphilic compounds which are suitable as coating materials are the following surfactants or, preferably, mixtures of these, in which the alkyl chains may be linear or branched and which have alkyl chains of in general between 8 and 20 carbon atoms: 1. Anionic surfactants soaps (alkali metal/alkaline earth metal/ammonium salts of the fatty acids), for example potassium stearate alkyl sulfates alkyl ether sulfates alkyl/isoalkylsulfonates alkylbenzenesulfonates, for example sodium dodecylbenzene sulfonate alkylnaphthalenesulfonate alkylmethyl ester sulfonates acyl glutamates alkylsuccinic ester sulfonates alkyl mono/diphosphates sarcosinates, for example sodium lauroylsarcosinate taurates 2. Cationic surfactants alkyltrimethylammonium halides/alkylsulfates alkylpyridinium halides dialkyldimethylammonium halides/alkylsulfates 3. Nonionic surfactants alkoxyated animal/vegetable fats and oils, for example corn oil ethoxylates, castor oil ethoxylates, tallow fat ethoxylates glycerol esters, for example glycerol monostearate fatty alcohol alkoxyates and oxoalcohol alkoxyates fatty acid alkoxyates, for example oleic acid ethoxylates alkylphenol alkoxyates, for example isononylphenol ethoxylates fatty amine alkoxyates fatty acid amide alkoxyates sugar surfactants, for example sorbitan fatty acid esters (sorbitan monooleate, sorbitan tristearate), polyoxyethylene sorbitan fatty acid esters, alkyl polyglycosides, N-alkylgluconamides alkylmethyl sulfoxides alkylmethylphosphine oxides, for example tetradecyldimethylphosphine oxide 4. Zwitterionic surfactants sulfobetaines carboxybetaines alkylmethylamine oxides, for example tetradecyldimethylamine oxide 5. Polymer surfactants di- tri- and multi-block polymers of the (AB)x-, ABA and BAB type, for example polyethylene oxide-block-polypropylene oxide, polystyrene-block-polyethylene oxide AB comb polymers, for example polymeth/acrylate-comb-polyethylene oxide 6. Others perfluorinated surfactants silicone surfactants phospholipids, for example lecithin amino acid surfactants, for example N-lauroylglutamate.

Brief Summary Text (54):

The turbulent mixing of the molecular-disperse solution of the crop protection active ingredient with the liquid formulation of the coating material (termed "dispersing solution") converts the former into a colloid-stable dispersion (micronizate) of coated particles of the essentially amorphous crop protection active ingredient.

Brief Summary Text (57):

To achieve particles as small as possible upon mixing, it is expedient to produce a vigorous turbulence in the mixing chamber by stirring or shaking the active ingredient solution and the dispersing solution with mechanical aids or, in particular, by injecting a forced stream of these two components into a mixing chamber.

Brief Summary Text (64):

As a rule, the average particle size in this colloid-disperse product is between 0.05 and 1.5, in most cases between 0.1 and 1, .mu.m (measured by dynamic light scattering by the method of B. Chu, "Laser Light Scattering", Academic Press, New York, 1974). Depending on the boiling point, the solvents can be removed from the colloid-disperse intermediate in a manner known per se, for example by distillation, if appropriate under reduced pressure, or by extraction. Membrane filtration and freeze drying (lyophilization) are furthermore possible. However, the preferred method--if appropriate after concentration (falling-film evaporator)--is spray granulation, in particular spray drying and the twin-emulsion method.

Brief Summary Text (65):

The resulting dry powder normally comprises 1 to 1000, in most cases, however, 5 to 100 ppm of residual solvent. The residual water content is normally 0.01 to 10, in

most cases 0.1 to 6, % by weight, based on the total mass of dry powder.

Brief Summary Text (66):

The presence of nanoparticle agglomerates in the dry powder depends mainly on the coating material and the drying conditions.

Brief Summary Text (67):

To promote the disintegration of such agglomerates upon dispersing the dry powder prior to use, the addition before drying of a spray adjuvant such as lactose or polyvinylpyrrolid-2-one to the colloid-disperse product after the mixing step is advantageous.

Brief Summary Text (69):

When the dry powder thus obtainable is dispersed in water, it normally produces a finely disperse spray mixture with the crop protection active ingredients distributed in the form of nanoparticles, as before.

Brief Summary Text (70):

Besides, the skilled worker is familiar with further details of the process for the preparation of the dry powder, and no further explanation is therefore necessary (cf. EP-A 65 193 and EP-A 641 596).

Brief Summary Text (72):

The dry powder may reach the user in customary containers, especially bottles, canisters or else bags made of chemical-resistant polymers. The use of water-soluble containers, amongst them especially water-soluble film bags, in particular those based on polyvinyl alcohol, is especially advantageous.

Brief Summary Text (84):

The herbicidal compositions can be employed, for example, in the form of directly sprayable aqueous suspensions, also highly-concentrated aqueous, oily or other suspensions, pastes, dusts, materials for spreading or granules, by means of spraying, atomizing, dusting, spreading or pouring. The use forms depend on the intended purposes; in any case, they should guarantee the finest possible distribution of the active ingredients according to the invention.

Brief Summary Text (85):

To widen the spectrum of action and to achieve synergistic effects, the herbicidal compositions according to the invention can be mixed and applied jointly with a large number of representatives of other groups of herbicidally active ingredients. Suitable components in mixtures are, for example, 1,2,4-thiadiazoles, 1,3,4-thiadiazoles, amides, aminophosphoric acid and its derivatives, aminotriazoles, anilides, (het)aryloxyalkanic acid and its derivatives, benzoic acid and its derivatives, benzothiadiazinones, 2-aryl-1,3-cyclohexanediones, hetaryl aryl ketones, benzylisoxazolidinones, meta-CF<sub>3</sub>-phenyl derivatives, carbamates, quinuclidinecarboxylic acid and its derivatives, chloroacetanilides, cyclohexane-1,3-dione derivatives, diazines, dichloropropionic acid and its derivatives, dihydrobenzofurans, dihydrofuran-3-ones, dinitroanilines, dinitrophenols, diphenyl ethers, dipyridyls, halocarboxylic acids and their derivatives, ureas, 3-phenyluracils, imidazoles, imidazolinones, N-phenyl-3,4,5,6-tetrahydrophthalimides, oxadiazoles, oxiranes, phenols, aryloxy- and hetaryloxyphenoxypropionic esters, phenylacetic acid and its derivatives, phenylpropionic acid and its derivatives, pyrazoles, phenylpyrazoles, pyridazines, pyridinecarboxylic acid and its derivatives, pyrimidyl ethers, sulfonamides, sulfonylureas, triazines, triazinones, triazolinones, triazolecarboxamides and uracils.

Detailed Description Text (5):

Preparation of a dry powder, for example chlorpyrifos (active ingredient content: approx. 15% by weight)

Detailed Description Text (9):

The mean particle size was determined as 247 nm by quasi-elastic light scattering, the distribution range being  $\pm 0.37\%$ . The mean of the volume distribution was determined by Fraunhofer diffraction as  $D(4,3)=0.62 \mu\text{m}$ , and the fines in the distribution were determined as  $99.8\% < 1.22 \mu\text{m}$ .

Detailed Description Text (10):

b) Drying of the Dispersion from (a) to a Nanoparticulate Dry Powder

Detailed Description Text (11):

Spray drying of the product from Preparation Example 1 a) gave a free-flowing nanoparticulate dry powder. The active ingredient content in the powder was determined by chromatography as 15.42% by weight chlorpyrifos (in theory: 15.56% by weight). The dry powder dissolved in drinking water giving a white, cloudy dispersion (Hydrosol).

Detailed Description Text (12):

The mean particle size was determined immediately after redispersion by quasi-elastic light scattering as 333 nm at a distribution range of  $\pm 0.38\%$ . The mean of the volume distribution was determined by Fraunhofer diffraction as  $D(4,3)=0.87 \mu\text{m}$ , and the fines in the distribution were determined as  $87.8\% < 1.22 \mu\text{m}$ . No noticeable increase in particle size was observed in the course of 4-6 hours (cf. Table 1). The decrease in particle size observed within the first hour after redispersion reflects the disintegration and complete redispersion in the form of nanoparticles of the particle associations formed upon spray drying.

Detailed Description Text (13):

The dry powder obtained in accordance with Preparation Example 1 b) was stored for 31/2 months at room temperature and normal humidity. The particle sizes of the hydrosol were then redetermined. Compared with the fresh dry-powder sample, the particles were slightly larger.

Detailed Description Text (14):

The mean particle size was determined immediately after redispersion by quasi-elastic light scattering as 385 nm at a distribution range of  $\pm 0.42\%$ . The mean of the volume distribution was determined by Fraunhofer diffraction as  $D(4,3)=0.88 \mu\text{m}$ , and the fines in the distribution were determined as  $75.5\% < 1.22 \mu\text{m}$ . No noticeable increase in particle size was observed in the course of 4-6 hours (cf. Table 2).

Detailed Description Text (16):

The DSC curves of the dry powder in accordance with Preparation Example 1 b) after storage for 31/2 months (FIG. 7) and those of a formulation of identical composition which was prepared by grinding the crystalline starting components (FIG. 8) are compared in FIGS. 7 and 8. The grinding method gives 4 peaks, which can be assigned to the melting peaks of the crystalline components chlorpyrifos, ascorbyl palmitate and lactose (cf. FIGS. 2 to 4). These peaks are "grafted" onto the broad background of the gelatin signals. In contrast, only a broad rise and drop are observed in the measurement of the dry powder prepared in accordance with Example 1 (FIG. 7). What is particularly important is that the melting peak of the crystalline active ingredient chlorpyrifos is absent, which suggests that the active ingredient exists predominantly in the amorphous form in the nanoparticulate dry powder.

Detailed Description Text (18):

FIG. 10 shows the scatter curves of active ingredient (top) and dry powder in accordance with Preparation Example 1 b) (middle). As confirmed by the interference diagram, which is distinguished by a series of well-defined interferences, the chlorpyrifos starting material is crystalline. In contrast, the scatter curve of the dry powder only shows diffuse, broad interference maxima as are typical for

amorphous material. Accordingly, the active ingredient in the dry powder prepared in accordance with 1 b) is X-ray amorphous. This also applies to the adjuvants lactose and ascorbyl palmitate, which are otherwise crystalline.

Detailed Description Text (20):

Preparation of a dry powder, for example chlorpyrifos (active ingredient content: approx. 25% by weight)

Detailed Description Text (24):

The mean particle size was determined as 252 nm by quasi-elastic light scattering, the distribution range being  $\pm 0.27\%$ . The mean of the volume distribution was determined by Fraunhofer diffraction as  $D(4,3)=0.62 \mu\text{m}$ , and the fines in the distribution were determined as  $99.8\% < 1.22 \mu\text{m}$ .

Detailed Description Text (25):

b) Drying of the Dispersion from (a) to a Nanoparticulate Dry Powder

Detailed Description Text (26):

Spray drying of the product from Preparation Example a) gave a free-flowing nanoparticulate dry powder. The active ingredient content in the powder was determined by chromatography as 24.67% by weight chlorpyrifos (in theory: 25.46% by weight). The dry powder dissolved in drinking water giving a white, cloudy dispersion (hydrosol).

Detailed Description Text (27):

The mean particle size was determined immediately after redispersion by quasi-elastic light scattering as 349 nm at a distribution range of  $\pm 0.55\%$ . The mean of the volume distribution was determined by Fraunhofer diffraction as  $D(4,3)=0.66 \mu\text{m}$ , and the fines in the distribution were determined as  $96.4\% < 1.22 \mu\text{m}$ . No noticeable increase in particle size was observed in the course of 4-6 hours (cf. Table 3).

Detailed Description Text (28):

The dry powder obtained in accordance with Preparation Example 2 b) was stored for 31/2 months at room temperature and normal humidity. The particle sizes of the hydrosol were then redetermined. Compared with the fresh dry-powder sample, the particles were slightly larger.

Detailed Description Text (29):

The mean particle size was determined immediately after redispersion by quasi-elastic light scattering as 345 nm at a distribution range of  $\pm 0.43\%$ . The mean of the volume distribution was determined by Fraunhofer diffraction as  $D(4,3)=0.89 \mu\text{m}$ , and the fines in the distribution were determined as  $72.9\% < 1.22 \mu\text{m}$ . No noticeable increase in particle size was observed in the course of 4-6 hours (cf. Table 4).

Detailed Description Text (30):

FIG. 9 shows the DSC curve of the dry powder of Preparation Example 2. The absence of the melting peak of chlorpyrifos suggests that the active ingredient in the particles is still predominantly amorphous, even after storage.

Detailed Description Text (32):

FIG. 10 shows the scatter curves of active ingredient (top) and dry powder in accordance with Preparation Example 2 b) (bottom). Again, the scatter curve of the dry powder only shows diffuse, broad interference maxima as are typical of amorphous material. Accordingly, the active ingredient in the dry powder prepared in accordance with 2 b) is in X-ray amorphous form.

Detailed Description Paragraph Table (1):

DSC: Mettler TA4000 apparatus, heating rate 10.degree. C./min Quasi-elastic light

scattering: BI 90 apparatus by Brookhaven Fraunhofer diffraction: Particle Sizer  
2600 apparatus by Malvern X-ray wide-angle scattering: Siemens D 5000 apparatus

Detailed Description Paragraph Table (2):

TABLE 1 Particle sizes (Fraunhofer diffraction) of a chlorpyrifos hydrosol comprising 0.2% of active ingredient, prepared by manually stirring the chlorpyrifos dry powder of b) into drinking water at room temperature on the day of spray drying. Time after redispersion D (4,3) [.mu.m] Fines <1.22 .mu.m Immediately 0.87 87.8 1 h 0.63 99.2 2 h 0.63 98.7 3 h 0.65 97.1 4 h 0.64 97.5 6 h 0.74 86.9 2 d 6.27 9.1 c) Storage behavior

Detailed Description Paragraph Table (3):

TABLE 2 Particle sizes (Fraunhofer diffraction) of a chlorpyrifos hydrosol comprising 0.2% by weight of active ingredient, prepared by manually stirring the chlorpyrifos dry powder of b) into drinking water at room temperature, 3 1/2 months after spray-drying. Time after redispersion D (4,3) [.mu.m] Fines <1.22 .mu.m Immediately 0.88 75.5 1 h 0.74 86.8 2 h 0.74 87.0 3 h 0.74 87.1 4 h 0.74 87.1 1 d 3.33 15.8 d) Differential Scanning Calorimetry (cf. FIG. 2 to FIG. 9)

Detailed Description Paragraph Table (4):

TABLE 3 Particle sizes (Fraunhofer diffraction) of a chlorpyrifos hydrosol comprising 0.2% of active ingredient, prepared by manually stirring the chlorpyrifos dry powder of b) into drinking water at room temperature on the day of spray drying. Time after redispersion D (4,3) [.mu.m] Fines <1.22 .mu.m Immediately 0.66 96.4 1 h 0.65 96.6 2 h 0.63 98.4 3 h 0.65 96.5 4 h 0.65 96.7 6 h 0.73 87.4 2 d 5.89 28.2 c) Storage behavior

Detailed Description Paragraph Table (5):

TABLE 4 Particle sizes (Fraunhofer diffraction) of a chlorpyrifos hydrosol comprising 0.2% by weight of active ingredient, prepared by manually stirring the chlorpyrifos dry powder of b) into drinking water at room temperature, 3 1/2 months after spray-drying. Time after redispersion D (4,3) [.mu.m] Fines <1.22 .mu.m Immediately 0.89 72.9 1 h 0.75 86.3 2 h 0.74 87.0 3 h 0.75 86.4 4 h 0.75 86.2 1 d 4.80 13.2 d) Differential Scanning Calorimetry

Current US Class (2):

504

CLAIMS:

1. A solid crop protection composition consisting essentially of a) one or more predominantly amorphous solid crop protection active ingredients in nanoparticulate form having a solubility in water of less than 500 mg/l at 25.degree. C., b) a coating enclosing component (a), wherein the coating component is at least one surface-active polymeric colloid or at least one surface-active, amphiphilic compound, or a mixture thereof, c) optionally a stabilizer, and d) optionally a plasticizer

the mean diameter of the nanoparticulate active ingredient particles after redispersion being in the range from 0.05 to 0.8 .mu.m.

14. The composition defined in claim 11, wherein the amphiphilic compound of the coating component (b) is at least one member selected from the group consisting of soaps, alkyl sulfates, alkyl ether sulfates, alkyl/isoalkylsulfonates, alkylbenzenesulfonates, alkyl naphthalenesulfonate, alkylmethyl ester sulfonates, acyl glutamates, alkylsuccinic ester sulfonates, alkyl mono- and di-phosphates, sarcosinates, taurates, alkyltrimethylammonium halides and alkylsulfates, alkylpyridinium halides, dialkyldimethylammonium halides and alkylsulfates, alkoxylated animal and vegetable fats and oils, glycerol esters, fatty alcohol alkoxylates and oxoalcohol alkoxylates, fatty acid alkoxylates, alkylphenol

alkoxylates, fatty amine alkoxylates, fatty acid amide alkoxylates, sugar surfactants, polyoxyethylene sorbitan fatty acid esters, alkyl polyglycosides, N-alkylgluconamides, alkylmethyl sulfoxides, alkyldimethylphosphine oxides, sulfobetaines, carboxybetaines, alkyldimethylamine oxides, (AB)x-, ABA or BAB, di-tri- and multi-block polymers AB comb polymers, perfluorinated surfactants, silicone surfactants, phospholipids, and amino acid surfactants.

15. The composition defined in claim 11, wherein the amphiphilic compound of the coating component (b) is at least one member selected from the group consisting of alkali metal, alkaline earth metal and ammonium salts of the fatty acids, alkyl sulfates, alkyl ether sulfates, alkyl- and isoalkylsulfonates, sodium dodecylbenzene sulfonate, alkylnaphthalenesulfonate, alkylmethyl ester sulfonates, acyl glutamates, alkylsuccinic ester sulfonates, alkyl mono- and diphosphates, sodium lauroylsarcosinate, taurates, alkyltrimethylammonium halides and alkylsulfates, alkylpyridinium halides, dialkyldimethylammonium halides and alkylsulfates, corn oil ethoxylates, castor oil ethoxylates, tallow fat ethoxylates, glycerol monostearate, fatty alcohol alkoxylates and oxoalcohol alkoxylates, oleic acid ethoxylates, isononylphenol ethoxylates, fatty amine alkoxylates, fatty acid amide alkoxylates, sorbitan fatty acid esters, polyoxyethylene sorbitan fatty acid esters, alkyl polyglycosides, N-alkylgluconamides, alkylmethyl sulfoxides, tetradecyldimethylphosphine oxide, sulfobetaines, carboxybetaines, tetradecyldimethylamine oxide, polyethylene oxide-block-polypropylene oxide, polystyrene-block-polyethylene oxide, polymethacrylate- and polyacrylate-comb-polyethylene oxide, perfluorinated surfactants, silicone surfactants, lecithin and N-lauroylglutamate.

16. A method of protecting crop plants, which comprises treating the crop plants their environment or their seeds with an effective amount of a solid composition consisting essentially of a) one or more predominantly amorphous solid crop protection active ingredients in nanoparticulate form having a solubility in water of less than 500 mg/l at 25.degree. C. and b) a coating enclosing component (a), wherein the coating component is at least one surface-active polymeric colloid or at least one surface-active, amphiphilic compound, or a mixture thereof,

or a dispersion thereof wherein the mean diameter of the nanoparticulate active ingredient particles after redispersion is of from 0.05 to 0 .mu.m.

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L23: Entry 37 of 59

File: USPT

Apr 17, 2001

DOCUMENT-IDENTIFIER: US 6218337 B1

**\*\* See image for Certificate of Correction \*\***TITLE: Solid mixtures of 3-isopropyl-2,1,3-benzothiadiazin-4-one-2,2,-dioxide or its saltsAbstract Text (1):A solid mixture comprisingBrief Summary Text (1):The present invention relates to a solid mixture comprisingBrief Summary Text (4):The present invention furthermore relates to a process for the preparation of this solid mixture, the use of the solid mixture is and method of controlling undesirable vegetation.Brief Summary Text (8):The earlier German Patent Application with the file number 196 13 395.5 describes granules of hygroscopic water-soluble products, for example the sodium salt of 3-isopropyl-2,1,3-benzothiadiazin-4-one 2,2-dioxide. These granules are preferably used without auxiliaries and additives.Brief Summary Text (9):DE-A 43 15 878 describes the solid, non-hygroscopic magnesium salt of 3-isopropyl-2,1,3-benzothiadiazin-4-one 2,2-dioxide. This publication also teaches a solid mixture of this salt and of sodium lignosulfonate which is solid per se and acts as dispersant.Brief Summary Text (10):It is an object of the present invention to provide further solid mixtures which are based on 3-isopropyl-2,1,3-benzothiadiazin-4-one 2,2-dioxide or a salt thereof and which additionally have a good biological activity.Brief Summary Text (11):We have found that this object is achieved by a solid mixture comprisingBrief Summary Text (14):We have furthermore found a process for the preparation of this solid mixture, and also the use of the solid mixture and a method of controlling undesirable vegetation.Brief Summary Text (18):The nonionic surfactants are alcohol alkoxyates, alkylated EO/PO block polymers, alkylphenol ethoxyates, polyols, EO/PO block polymers, organosilicone [sic] compounds, alkyl glycosides, alkyl polyglycosides, fatty amine alkoxyates, dialkyl adipates and dialkyl phthalates.Brief Summary Text (19):

Especially preferred amongst the nonionic surfactants are alcohol alkoxyates, alkylated EO/PO block copolymers, EO/PO block polymers, organosilicon compounds,

alkyl glycosides, alkyl polyglycosides, fatty amine alkoxyates, dialkyl adipates and dialkyl phthalates.

Brief Summary Text (20):

Particularly preferred are alcohol alkoxyates, alkylated EO/PO block polymers, EO/PO block copolymers, alkyl glycosides, alkyl polyglycosides, fatty amine alkoxyates, dialkyl adipates and dialkyl phthalates.

Brief Summary Text (21):

Especially preferred amongst the nonionic surfactants are also alkyl glycosides and alkyl polyglycosides, mainly alkyl polyglycosides. Suitable substances which are preferred are alkyl polyglycosides with a mean degree of polymerization of 1.0 to 1.7. Additionally preferred are alkyl polyglycosides with a C.sub.6 -C.sub.18 -alkyl chain.

Brief Summary Text (26):

Examples of alkyl glycosides and alkyl polyglycosides are, inter alia, AG 6202 (Akzo Nobel); Lutensol.RTM. GD 70 (BASF AG); Atplus.RTM. 258, Atplus.RTM. 264, Atplus.RTM. 430, Atplus.RTM. 460, Atplus.RTM. 469, Atplus.RTM. 450 (ICI Surfactants); Agrimul.RTM. PG 2067, Agrimul.RTM. PG 2069", Agrimul.RTM. PG 600", Agrimul PG 215" (Henkel).

Brief Summary Text (46):

The following embodiments of the solid mixture according to the invention are preferred:

Brief Summary Text (48):

Especially preferred in this context are the mixtures which comprise, as component B, an alkyl glycoside or alkyl polyglycoside. Substances which are particularly suitable are alkyl polyglycosides with a degree of polymerization of 1.0 to 1.7. Also preferred are alkyl polyglycosides having C.sub.6 -C.sub.18 -alkyl chains. Examples of suitable alkyl polyglycosides are AG 6206 (Akzo Nobel), Lutensol.RTM. GD70 (BASF AG), Atplus.RTM. 258, Atplus.RTM. 264, Atplus.RTM. 430, Atplus.RTM. 460, Atplus.RTM. 469, Atplus.RTM. 450 (ICI Surfactants), Agrimul.RTM. PG 2067, Agrimul.RTM. PG 2069", Agrimul.RTM. PG 600", Agrimul.RTM. PG 215" (Henkel).

Brief Summary Text (51):

Especially preferred in this context are mixtures which comprise, as component B, at least one alkyl glycoside or alkyl polyglycoside, or mixtures of these.

Brief Summary Text (53):

Most preferred in this context are mixtures which comprise, as component B, an alkyl polyglycoside or mixtures of these.

Brief Summary Text (57):

The mixtures according to the invention especially preferably comprise, as component B, at least one alkyl glycoside or alkyl polyglycoside or mixtures of these.

Brief Summary Text (59):

Most preferred in this context are mixtures which comprise, as component B, an alkyl polyglycoside or mixtures of these.

Brief Summary Text (63):

The substances which are also particularly suitable as components B are alkyl polyglycosides, as ammonium salt ammonium sulfate and as antifoam agents, for example, silicone oils, silicone oil emulsions or long-chain alcohols.

Brief Summary Text (66):

The substances which are particularly suitable as other active ingredients used in

crop protection are herbicidally and growth-regulatory active compounds, eg. 1,2,4-thiadiazoles, 1,3,4-thiadiazoles, amides, aminophosphoric acid and its derivatives, glyphosate, glyphosinate, aminotriazoles, anilides, (het)aryloxyalkanoic acid and its derivatives, benzoic acid and its derivatives, benzothiadiazinones, triketones, hetaryl aryl ketones, benzylisoxazolidinones, meta-CF<sub>3</sub>-phenylpyridines, carbamates, quinoline [sic] acid and its derivatives, chloroacetanilides, cyclohexanedione oxime ethers, diazines, dichloropropionic acid and its derivatives, dihydrobenzofurans, dihydrofuran-3-ones, dinitroanilines, dinitrophenols, diphenyl ethers, dipyridyls, halocarboxylic acids and their derivatives, ureas, N-phenyluracils, imidazoles, imidazolinones, isoindolediones, oxadiazoles, oxiranes, phenols, aryloxy- or hetaryloxyphenoxypropionic esters, phenylacetic acid and its derivatives, phenylpropionic acid and its derivatives, pyrazoles, phenylpyrazoles, pyridazines, pyridinecarboxylic acid and its derivatives, pyrimidyl ethers, sulfonamides, sulfonylureas, triazines, triazinones, triazolinones, triazolecarboxamides, triketones, 4H-1,3-benzoxazines, N-phenylcarbamates and thiocarbamates. The following are preferably suitable as additional active ingredients used in crop protection: glyphosate, (het)aryloxyalkanoic acid and its derivatives, benzoic acid and its derivatives, triketones, hetaryl aryl ketones, quinoline [sic] acid and its derivatives, cyclohexanedione oxime ethers, dichloropropionic acid and its derivatives, dinitroanilines, diphenyl ethers, dipyridyls, halocarboxylic acids and their derivatives, ureas, imidazolinones, phenols, aryloxy- or hetaryloxyphenoxypropionic esters, phenylacetic acid and its derivatives, phenylpropionic acid and its derivatives, pyridazines, pyridinecarboxylic acid and its derivatives, sulfonamides and sulfonylureas.

Brief Summary Text (73):

If appropriate, the resulting crude mixture is treated with more water so that an extrudable material is formed. This is subsequently extruded. Basket extruders, radial extruders or dome extruders in which the granule undergoes little compaction are preferably used for this purpose. The granules which have thus been obtained by means of extruder granulation, are dried and, if appropriate, screened.

Brief Summary Text (75):

If appropriate, the resulting crude mixture is treated with more water so that an extrudable material is formed and this is subsequently extruded. Basket extruders, radial extruders or dome extruders in which the granule undergoes little compaction are preferably used for extrusion.

Brief Summary Text (76):

The resulting granules are dried and, if appropriate, screened. The proton acceptor is expediently employed in an equimolar ratio based on the technical-grade active ingredient. However, it may be advantageous to employ an excess or a substoichiometric amount of proton acceptor.

Brief Summary Text (77):

Equally, it is possible to carry out a fluidized-bed granulation. To this end, an aqueous solution, emulsion or suspension of the mixture according to the invention is sprayed and agglomerated in a fluidized-bed granulation apparatus.

Brief Summary Text (78):

However, it is also possible to introduce solid constituents of the mixture according to the invention into the apparatus and to spray them with a solution, emulsion or suspension of the remaining constituents of the mixture according to the invention, thus agglomerating them.

Brief Summary Text (79):

Furthermore suitable for preparing the mixtures according to the invention are spray-drying, mixer granulation and disk granulation.

Detailed Description Text (15):

65.7 g of crystalline ammonium sulfate with a particle size of less than 0.5 mm were introduced into a laboratory fluidized-bed granulator. A two-substance nozzle was located above the fluidized bed. The granules which had been introduced were fluidized using air at an input temperature of 120.degree. C. The spray pressure was set at 2.1 bar. The spray mixture was sprayed into the fluidized bed, and the water evaporated.

Detailed Description Text (16):

At the end of the granulation process, granules comprising 60% by weight of bentazone and 5.7% by weight of Silwet.RTM. L77 were obtained.

Detailed Description Text (18):

1724.0 g of dry Na.sup..sym. -bentazone were dissolved in 1350.0 g of distilled water. 300.0 g of AG.RTM. 6202 (alkyl polyglucoside, Akzo) in the form of a 65% by weight aqueous solution were then incorporated and the mixture was used as spray solution. 465.0 g of crystalline ammonium sulfate with a particle size of less than 0.5 mm were introduced into a laboratory fluidized-bed granulator (MP1, Niro-Aeromatic). A two-substance nozzle was located above the fluidized bed. The granules which had been introduced were fluidized using air at an input temperature of 120.degree. C. The spray pressure of the two-substance nozzle was set at 3 bar. The spray solution was sprayed into the fluidized bed, and the water evaporated. Granules comprising 61.5% by weight of Na.sup..sym. -bentazone, 8% by weight of alkyl polyglucoside and 1% of residual moisture were obtained.

Detailed Description Text (20):

50.7 g of Na.sup..sym. -bentazone, 8.8 g of Lutensol.RTM. GD 70, 8.5 g of sodium hydroxide and 2.8 g of distilled water were introduced into an IKA.RTM. laboratory mill and mixed intimately. A reaction started, during which Na.sup..sym. -bentazone was formed. The resulting viscous bulk was treated with 29.2 g of ammonium sulfate, and a further 13.2 ml of water were added a little at a time. This resulted in a moist bulk which was extruded by means of an extruder (KAR-75, Fitzpatrick, aperture size 0.8 mm). The resulting granules were dried in a drying oven at 60.degree. C.

Current US Class (1):

504

## CLAIMS:

1. A solid mixture comprising

A) a salt of 3-isopropyl-2,1,3-benzothiadiazin-4-one 2,2-dioxide and

B) at least one alkyl glycoside or alkyl polyglycoside.

2. A solid mixture as defined in claim 1 which furthermore comprises at least one water-soluble inorganic salt from amongst the following group: ammonium salt, alkali metal salt or alkaline earth metal salt.

3. A solid mixture as defined in claim 2 in which the water-soluble inorganic ammonium salt is ammonium sulfate.

4. A solid mixture as defined in claim 1 which comprises 0.5 to 90% by weight of component A.

5. A solid mixture as defined in claim 1 which comprises 3 to 40% by weight of component B.

6. A process for the preparation of a solid mixture as defined in claim 1 which

comprises mixing the components and granulating the resulting mixture.

7. A method of controlling undesirable vegetation which comprises treating the seeds, the plants or their environment with a herbicidally active amount of the solid mixture as defined in claim 1.

8. The solid mixture of claim 1, wherein component A is the sodium, magnesium or ammonium salt of 3-isopropyl-2,1,3-benzothiadiazin-4-one-2,2-dioxide.

9. The solid mixture of claim 1, wherein component A is the sodium salt of 3-isopropyl-2,1,3-benzothiadiazin-4-one-2,2-dioxide.

10. The solid mixture of claim 1, wherein component B comprises an alkyl polyglycoside having a degree of polymerization of 1.0 to 1.7.

11. The solid mixture of claim 1, wherein component B comprises an alkyl polyglycoside having an alkyl chain of C.sub.6 -C.sub.18.

12. A solid mixture as defined in claim 3, wherein component A is the sodium salt of 3-isopropyl-2,1,3-benzothiadiazin-4-one-2,2-dioxide.

13. A solid mixture as defined in claim 3, wherein component B comprises an alkyl polyglycoside having a degree of polymerization of 1.0 to 1.7.

14. A solid mixture as defined in claim 3, wherein component B comprises an alkyl polyglycoside in which the alkyl group has from 6 to 18 carbon atoms.

15. A solid mixture as defined in claim 3, wherein component B comprises an alkyl polyglycoside having a degree of polymerization of 1.0 to 1.7 and a C.sub.6 - C.sub.18 chain.

16. A solid mixture as defined in claim 3, wherein component A is the sodium salt of 3-isopropyl-2,1,3-benzothiadiazin-4-one-2,2-dioxide and component B comprises an alkyl polyglycoside having a degree of polymerization of 1.0 to 1.7 and an alkyl chain of 6 to 18 carbons.

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